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EXAMINER
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KUNEMUND, ROBERT M

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/690,688  
Filing Date: October 21, 2003  
Appellant(s): KAMINS ET AL.

**MAILED**  
**JAN 29 2008**  
**GROUP 1700**

Julia Church Dieker  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed October 30, 2007 appealing from the Office action mailed May 30, 2007.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

**WITHDRAWN REJECTIONS**

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. The 35 U.S.C. 112 first paragraph rejection has been withdrawn by the examiner.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

6,831,017

Li et al

12-2004

Gudiksen et al, "Growth of Nanowire Superlattice Structures for Nanoscale Photonics and Electronics", Nature vol. 415 (Feb. 7, 2002) pages 617-620.

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

**DETAILED ACTION**

Claims 1, 5 to 7, 10 to 18, 20 to 24 and 28 to 40 stand rejected under 35 under 35 U.S.C. 103(a) as being unpatentable over Li et al (6,831,017) in view of Gudiksen et al (Nature article).

The Li et al reference teaches a method and product of nanowires, note entire reference. On a substrate, a pattern of a catalyst is created and placed. The catalyst can be a gold dot, note col. 5 lines 15-25. Then the source materials for the nanowires are flowed over the substrate and caused to decompose to grow the nanowire, note col. 5 lines 26-45. The source materials are gases and decomposed by standard means and processes such as MOCVD. The grown nanowires can be silicon, II-VI or III-V. After the nanowire growth, an insulation material different from the nanowire material is deposited around the nanowires, note col. 5 lines 45-55. The Li et al reference differs from the instant claims in the nanowire having two materials. However, the Gudiksen et al reference teaches growing nanowires with two separate materials, note page 617. It would have been obvious to one of ordinary skill in the art to modify the Li et al

reference by the teachings of the Gudiksen et al reference to have two materials in the nanowire in order to create diverse applications for the nanowire structure.

Claims 8, 9, and 19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al in view of Gudiksen et al (Nature article).

The Li et al and Gudiksen et al references are relied on for the same reasons as stated, supra, and differ from the instant claims mold for the catalyst. However, in the absence of unexpected results, it would have been obvious to one of ordinary skill in the art to determine through routine experimentation the optimum, operable means to pattern and apply the catalyst in the Li et al reference in order to create and maintain the desired pattern, which is the pattern for the nanowires.

#### **(10) Response to Argument**

Appellants' argument concerning the 112 first paragraph rejection is noted. In view of the arguments and cites set forth the rejection has been withdrawn by the examiner of record.

Appellants' argument concerning claims 1, 5, 6, 10-18, 20-24, 28, 29, 38 and 39 is noted. However, the examiner has provided a reasoning to combine the references. The Gudiksen et al article does teach that by changing the composition the nanowires can be used for more applications. This is sufficient and clear motivation to modify the Li et al reference note page 617 of Gudiksen et al.

Appellants' argument concerning the Li et al reference has been considered and not deemed persuasive. The reference is not limited in scope to figures or one embodiment. Appellants admit the reference teaches other substrates and deposition techniques. Thus, the reference does teach the claimed invention, noting that orientation and substrate properties. It is noted, that appellants use the instant figures to support 3d controlled growth. The figures of the Li et al reference are similar in nature to the instant ones. The Li et al reference then must also have the same control in 3d growth as instantly claimed.

Appellants' argument concerning the 132 declaration is noted. However, the declaration is by one of the applicants. It is an opinionary declaration with no factual evidence to support the conclusions set forth by the applicant.

Appellants' argument concerning the combination in view of the electric field is noted. Appellants merely argue one embodiment of the Li et al reference to not combine references. This is unduly limiting the scope and teachings of the Li et al reference. In column 5 the Li et al reference teaches that an electric fields may be employed this clearly teaches it does not have to be. Thus, the reasoning not to combine references is not proper. Further, appellants have not shown that the growth will not occur but merely argued this point. There is no reasoning given to support this argument. It is noted that the nanowires in the Nature article are in fact grown on a substrate and are similar to that of Li et al.

Appellants' argument concerning nanowire size has been considered and not deemed persuasive. Again, appellants agree that the Li et al reference teaches a broad

range, and again appellants argue to limit the teachings of the reference to a smaller range.

Appellants' argument concerning the native oxide is noted. However, it is unclear as to how this pertains to the instant invention and rejections. The growth of nanowires is taught in the Li et al and Gudiksen references. The removal of native oxides is not an issue at hand as it is not claimed.

Appellant's argument concerning the matrix claims 7 and 30 is noted. However, the Li et al reference does not limit the matrix to one particular type. It does mention amorphous but is not limited in scope and thus reads on the claims. The reference does teach the use of different materials which reads on the instant claims.

Appellants' argument concerning claims 31, 32 and 40 has been considered and not deemed persuasive. The combination of references teaches the structure that is claimed, the substrate, nanowire, nanowire composition and matrix. Thus the combination does teach the limitations set forth in the claims. The Gudiksen et al reference does teach the applications in photonics.

Appellants' argument concerning claims 33 to 37 has been considered and not deemed persuasive. Again, the combination of references teaches the structure that is claimed, and the references do teach quantum dots structures using the nanowires.

Appellants' argument concerning the mold step claims 8, 9 and 19, has been considered and not deemed persuasive. A mold is used to make sure that the catalyst is placed correctly and each time running the process, the same place giving a uniform product. Thus, it is within the skill of the art to use molds in order to increase the

uniformity of the final product. The references do teach that the catalyst must be in a set place in order to create the array. Appellants have not given any evidence that this is not within the skill of the art. Molding or imprinting to place a material in a set place is within the skill of the art in order that one can reproduce the same array every time. The examiner has set forth a clear line of reasoning in order to modify the references.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

*/Robert Kunemund/*

*Robert Kunemund*

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